Nappy Rash: Prevention and Treatment in the Neonatal Intensive Care Unit (NICU)

Guideline Responsibilities and Authorisation

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Guideline Review History

Version	Updated by	Date Updated	Summary of Changes
01	Kirsten Wells	Oct 2013	First version
02	Sue Shearer	May 2020	Update of skin protection products and management of nappy rash New template

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Nappy Rash: Prevention and Treatment in the Neonatal Intensive Care Unit (NICU)

1 Overview

These guidelines are taken from an overview of evidence-based newborn skincare guidelines.

The guideline is available in the 2013 AWHONN Neonatal Skin Care Evidence Clinical Practice Guideline, 3rd Edition.

1.1 Purpose

To outline preventative measures and treatment pathways for the management of nappy rash in both normal and high risk babies.

1.2 Scope

All Waikato nursing staff working in NICU.

1.3 Patient group

Infants in NICU.

1.4 Definitions

Antifungal cream	Used to treat fungal or yeast infections of the skin, e.g. Miconazole cream, Nystatin Cream. Note: Nystatin 100,000iu/ml oral suspension is prescribed for oral thrush if indicated.
AWHONN	Association of Women's Health, Obstetric and Neonatal Nurses
Bottom bath technique	Technique used to cleanse the area gently, avoiding irritation/damage
Candida albicans nappy rash	Rash predominantly caused by Candida albicans. Erythema initially developing around perineal skin, later spreading to the perineum and sometimes upper thighs. Develops into marginated confluent zones with the papules/pustules involving the small creases of the nappy area with satellite lesions. Oral thrush may be present. The mouth should always be examined and co-existing oral thrush treated.
Cavilon Durable Barrier Cream	A clear water-resistant barrier cream with additional ingredients for moisturising and conditioning the skin.
Cavilon No Sting Barrier Film	A polymer-based, alcohol free liquid that form a breathable, transparent, protective coating over the skin to protect from moisture and friction. Helps protect intact or damaged skin from further irritation.
Infants at high risk	Infants who have a condition such as jaundice, short bowel syndrome, malabsorption, opiate withdrawal, infections, diarrhoea and cystic fibrosis are more likely to develop nappy rash due to more frequent or acidic bowel motions.
Infants at normal to mild risk	Infants who are on fortified breast milk or infant formula.

Mild nappy rash	Faint to definite pink rash of less than 10% of the nappy area, with or without scattered papules, with or without dryness or scaling. Unlikely to distress the infant.
Moderate to severe nappy rash	Moderate to severe rash covering more than 10% of the nappy area, with or without papules, oedema or ulceration. More likely to be distressing to the infant. May be secondary infected by Candida albicans.
Orabase™ Protective Paste	A pectin-based paste formulated to adhere to wet areas and mucus membranes to protect and sooth skin irritations.
Skin Barrier protection products	
Skin pH	A figure representing the acidity or alkalinity where 7 is neutral, <7 is more acidic and >7 is more alkaline. Skin pH ranges from >6 to just over 7 at birth dropping to 5.5 in the first week, finally attaining a pH of 5.0 over the next 3 weeks. Alkaline skincare products (e.g. soap) temporarily increase skin pH which can cause a rise in skin microbes. An alkaline pH can disrupt the skin barrier function. An acid pH enables the skin barrier function to protect and assist in preventing infection.
Stomahesive™ Protective Powder	A pectin-based powder that absorbs moisture to form a protective barrier against discharge on open or weeping areas of skin.
Stratum corneum	The outer layer of the epidermis acting as a mechanical barrier, providing skin barrier function, protecting against toxins and microorganisms. Often described as like the bricks and mortar of a wall – the overall aim is to keep this 'wall' intact to protect the body from water loss, irritants penetrating and an ideal pH of around 5.0
White Soft Paraffin	Petrolatum-based, protective water-resistant barrier which can assist in the prevention of nappy rash. Petrolatum enhances skin integrity with its ability to travel through the spaces in the stratum corneum.
Zinc and Castor Oil Ointment	Mild antiseptic emollient barrier with zinc oxide 7.5%w/w. Beneficial for its ability to provide antiseptic, antibacterial and astringent properties. Is lighter to apply compared to other zinc oxide products (e.g. Sudocrem) therefore easier to visualise the skin underneath when applied and easy to gently remove when cleaning the nappy area.

2 Clinical Management

2.1 Competency required

- Registered Nurse who has completed L2 orientation.
- Enrolled Nurse who has completed L2 orientation and under the direction and delegation of a Registered Nurse.
- Parents/care givers under the supervision and support of the nurse assigned to their baby

2.2 Equipment

Pharmaceutical products as recommended below

Baby wipes - disposable, alcohol/perfume/preservative free

2.3 Guideline

2.3.1 Preventing Nappy Rash

- Maintain an optimal skin environment in the perineal area
- Be aware of any predisposing factors/risk factors that may increase the risk of nappy rash occurring.
- Encourage breastfeeding. The stools and urine of breastfed infants have a lower pH and lower level of enzymes compared with formula fed infants, favourably affecting the skin surface pH and resulting in less irritation in the perineal area.
- Avoid prolonged contact with urine and faeces. Change nappy frequently 1-4 hourly (as infant's condition allows).
- Use absorbent, gel core disposable nappies to assist with absorption of fluids away from the skin and disposable, alcohol/perfume/preservative free patient wipes for cleaning the nappy area.
- Gently cleanse and rinse with warm water and pat the nappy area dry. Avoid rubbing/dragging the skin.
- Use a 'bottom bath' technique if skin appears pink, irritated or excoriated.
- Focus on prevention including the application of a protective barrier cream to the nappy area, beginning as soon as possible after admission and continuing during daily nappy changes.
- Use petrolatum-based ointments or skin barriers containing zinc-oxide at every nappy change for infants at risk of nappy rash.
- Treat skin excoriation from contact irritant diaper dermatitis.
- Identify and treat the underlying cause
- Protect the injured skin with a thick application of barrier cream or paste
- Use an alcohol-free pectin-based layer covering with petrolatum if zinc oxide alone is not effective healing the injured skin.
- Residual cream should not be removed with cleaning at nappy changes, just residual faecal matter, unless the area is also being treated for Candida.
- Identify and treat nappy rash complicated with Candida albicans. Treat with antifungal cream as charted in the infant's drug chart and a barrier cream to protect and aid healing.
- Assess the nappy area at every nappy change for redness, excoriation, discharge or rash and document.

- Parents/primary caregivers should be advised on how to recognise the signs and symptoms of nappy rash and how to treat it.
- Encourage and support parents/caregivers to be involved in nappy change as often as possible.

2.3.2 Basic care for prevention of nappy rash for infants at normal to mild risk

- Perform hand hygiene
- Ensure the parents/caregivers know about good hand hygiene for nappy changes and are aware of the importance of regular nappy changes, including how to wash and dry the area well, the signs and symptoms of nappy rash and how to treat it.
- Teach parents/caregivers to place the soiled nappy in a brown paper bag immediately after changing and to wash their hands again before recommencing their baby's care.
- Ensure the parents/caregivers of female infants know how to wash the nappy area from front to back to prevent bacteria transferring from the anal area to the vagina and urethra.
- Gently cleanse with a baby wipe and warm water and pat dry. Clean the area thoroughly and check skin folds.
- Wet the baby wipe thoroughly to ensure gentle cleaning without rubbing or dragging on the skin.
- In the situation of frequent stools or sticky meconium, use a small disposable container with warm water and a drop of soap-free baby wash to perform a 'bottom bath'. This assists in gentle removal of stools without rubbing or dragging on the skin.
- Assess the nappy area for redness, rash excoriation or any changes.
- Once the skin is dry, apply White Soft Paraffin or Zinc and Castor Oil Ointment BP (7.5% w/w) to the nappy area as a protective barrier.
- Document any changes in dry skin condition in the infant's clinical notes to assist in assessment and continuity of care.

2.3.3 Basic care for prevention of nappy rash for infants at high risk

- Perform basic care for prevention of nappy rash as outlined in 2.3.2
- Use consistent strategies such as gentle, thorough washing, removal of faecal matter, drying and skin assessment to reduce the incidence and/or severity of nappy rash.
- Apply a moderate layer of Sudocrem to the area that is exposed to urine and stools.
- Be aware of each infant's potential risk factors. Be proactive with applying Sudocrem as a protective barrier.

2.3.4 Treatment of mild nappy rash

- Perform basic care for prevention of nappy rash as outlined in 2.3.2
- Use consistent strategies such as gentle, thorough washing, removal of faecal matter, drying and skin assessment to reduce the incidence and/or severity of nappy rash.
- Apply a thin layer of Cavilon Durable Barrier Cream with each nappy change to provide a pH balanced, water-resistant barrier to protect the area from injury and moisture and condition the skin.
- Avoid vigorously rubbing the barrier cream off at subsequent nappy changes. Gently wash, trying to remove only the stool.
- Aim to leave the barrier intact, but if the barrier is patchy, wash, pat dry and reapply the barrier.

2.3.5 Treatment of combination contact irritant nappy rash and Candida

If there is no improvement in the condition of the nappy area after 48 hours of regular Cavilon Durable Barrier Cream use, consider sending a swab for Candida. (Candida may not always display a typical appearance).

It is a clinical decision as to whether antifungal treatment is initiated at this point or whether the results from the swab will determine further treatment.

Procedure

- Perform basic care for prevention of nappy rash as outlined in 2.3.2
- Use consistent strategies such as gentle, thorough washing, removal of faecal matter, drying and skin assessment to reduce the incidence and/or severity of nappy rash.
- Identify Candida albicans by the presence of a bright red, inflamed area, slightly defined in the inguinal folds, buttocks and thighs with red satellite lesions scatted at the edges.
- Send a swab for culture to assist the diagnosis of Candida
- Antifungal cream must be prescribed by a Nurse Practitioner/Clinical Nurse Specialist/ Registrar and signed for by the nurses on the infant's drug chart. Apply prescribed antifungal cream as charted to the clean, dry nappy area.
- Apply a barrier cream to the area at nappy changes in between the charted applications of antifungal cream. The barrier may be applied on top of the antifungal cream when it is due to be applied. Zinc and Castor Oil Ointment or Cavilon Durable Barrier Cream are both suitable protective barrier creams to be used.
- The Zinc and Castor Oil ointment or Cavilon Durable Barrier Cream must be gently cleaned away before reapplying the due application of antifungal cream.
- Continue treatment for at least 3 days after the rash has healed.

- The infant should be assessed for oral thrush and treated with oral Nystatin drops (as per NICU medication guideline). A discussion should also be held with the mother if she is breast feeding, regarding watching for signs and symptoms of Candida on her nipples.

2.3.6 Treatment of non-resolving nappy rash where Candida is NOT present

- Perform basic care for prevention of nappy rash as outlined in 2.3.2
- Use consistent strategies such as gentle, thorough washing, removal of faecal matter, drying and skin assessment to reduce the incidence and/or severity of nappy rash.
- Expose the skin to the air for periods of time to allow the skin to dry and to reduce constant irritation and friction from a soiled nappy
- When allowing 'air time', lay infant on a gel core nappy, not an incontinence sheet.
- Injured skin needs protection. Protect the injured skin with thick applications of clear barrier cream (e.g. Cavilon Durable Barrier Cream) or zinc oxide barrier cream (e.g. Sudocrem) – like "icing on a cake".
- If the applications are not adequately protecting the skin from reinjury and healing, use a clear barrier film or a pectin-based layer.
- For red, raw, denuded, non-weeping breakdown
  - Cavilon No Sting Barrier Film
  - Orabase Protective Paste (pectin-based)
- For red, raw, denuded weeping/bleeding breakdown
  - Stomahesive Powder (pectin based)
- The 'crusting technique' can be used for further healing
  - Apply the barrier film or pectin-based product
  - Seal over with a thick layer of Sudocrem
  - If using Stomahesive Powder, apply another light dusting of the powder over the top of the Sudocrem to minimise the nappy absorbing the Sudocrem
  - Residual cream should not be removed with nappy changes. Gently cleanse the area of residual faecal matter, pat dry and reapply clear protective barrier film or pectin-based layer, topped with barrier cream.
- Evaluate the nappy area at each nappy change. Document any changes in skin condition in the infant's clinical notes.

2.3.7 Bottom Bath Technique

- Perform the 5 moments of hand hygiene throughout the nappy change procedure.
- Prepare equipment
- Disposable pottle
- Soap free baby wash
- Baby wipes - disposable, alcohol/perfume/preservative free
- Warm water
- Towel
- Recommended barrier product
- Disposable nappy
- Brown paper bag
- Gloves
- Remove the soiled nappy and dispose in the brown bag
- Place a towel (folded for better water absorption) under the infant to protect the bedding
- Gently wash the nappy area from front to back, trickling water over the skin to remove urine and faecal matter. Pat gently to remove excess faecal matter. Use a non-drag approach to minimise further damaging the injured skin.
- If the previously applied barrier cream remains in place do not rub it off. Remove all visible faecal matter and pat dry well.
- Allow time to air dry as able.
- Apply barrier cream
- Remove the wet towel and place clean, dry disposable nappy on the infant.
- Discard the disposable pottle used to wash the infant so it is not mixed up with the milk warming disposable pottle.
- Perform hand hygiene as per 5 moments of hand hygiene used throughout the procedure.

3 Audit

3.1 Indicators

- All adverse changes in the condition of every infant's nappy area are documented and action taken as per this procedure to remedy same promptly.
- There is documented evidence of an oral assessment for Candida Albicans when Candida is diagnosed as colonised in the nappy area.

4 Evidence base

4.1 References

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4.2 Associated Waikato DHB Documents

- Waikato DHB NICU Drug Manual

Appendix A – Nappy Rash Flowchart – Recommended Nappy Rash Products

Nappy Rash Flow Chart: Recommended Nappy Care Products